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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/660,186

09/11/2003

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EXAMINER

BERNSHTEYN, MICHAEL

ART UNIT

PAPER NUMBER

1796

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/660,186	Applicant(s) BECKLEY ET AL.	
	Examiner MICHAEL M. BERNSHTEYN	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 11-13, 15, 16 and 18-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 11-13, 15, 16 and 18-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action follows a response filed on April 7, 2009. No claims have been amended; claims 14 and 17 have been cancelled; claims 25 and 26 have been added.
2. Claims 1-6, 11-13, 15, 16 and 18-26 are pending.

Claim Rejections - 35 USC § 103

3. The text of this section of Title 35, U.S.C. not included in this action can be found in a prior Office Action.
4. Claims 1-6, 11-13, 15, 16, 18-20 and 22-24 are rejected under 35 U.S.C. §103(a) as being unpatentable over Irie et al. (U.S. Patent 5,959,028) in view of Straw (U. S. Patent Application Publication 2003/0165701), for rationale recited in paragraph 5 of Office action dated on January 9, 2009, and comments below.
5. Claim 21 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Irie et al. (U. S. Patent 5,959,028) and Straw (U. S. Patent Application Publication 2003/0165701) as applied to claims 1-6, 11-20 and 22-24 above and further in view of Leake (U. S. Patent 6,521,716), for rationale recited in paragraph 6 of Office action dated on January 9, 2009, and comments below.
6. Claims 25 and 26 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Irie et al. (U. S. Patent 5,959,028) in view of Straw (U. S. Patent Application Publication 2003/0165701) and Leake (U. S. Patent 6,521,716).

With regard to the limitations of claim 25, the combined teaching of Irie and Straw is silent that the curable mixture does not contain any of the catalysts usually used for Michael addition reactions.

With regard to the limitations of claim 25, Leake discloses that the reaction mixture in Michael reaction becomes less polar during curing, and in a coating the affinity for water should consequently decrease as curing progresses. In some cases, a water-soluble polymer/crosslinker system can be transformed into a water-resistant cured coating upon crosslinking. There is, however, need for Michael curing coatings, which cure more rapidly, particularly at ambient temperature, and/or are capable of curing without the need for powerful alkaline catalysts (col. 1, line 67 through col. 2, line 9). Leake exemplifies that PPDIDC and EEMTCH were cured without catalyst under the conditions described in Example 25 and formed a tack-free film in 48 hours (Example 26, col. 32, line 50 through col. 33, line 15).

All these references are analogous art because they are from the same field of endeavor concerning new coating resin composition curing by Michael addition reaction.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the curing without the need for powerful catalysts as taught by Leake in combined Irie's and Straw's curable resin composition for coating in order to obtain Michael curing coating which cure more rapidly, particularly at ambient temperature (US'716, col. 2, lines 5-8), and thus to arrive at the subject matter of instant claim 25.

With regard to the limitations of claim 26, Irie discloses curable resin composition comprising: (a) a component containing a plurality of α,β -ethylenically unsaturated carbonyl groups in the molecule; b) an acrylate polymer containing a plurality of malonate-terminated pendant groups in the molecule; and (c) a catalyst capable of promoting the Michael reaction (col. 2, lines 10-15).

Component (b) may be produced by copolymerizing a malonate-terminated acrylate monomer with a copolymerizable acrylic and/or non-acrylic monomer as exemplified in connection with component (a) (col. 3, lines 44-47). The malonate-terminated acrylate monomers have the formula, which is substantially identical to formulas in claim 12 (col. 3, lines 52-57). Therefore, component (b) corresponds to the claimed multi-functional Michael donor and accordingly to the claimed anion of Michael donor.

Response to Arguments

7. Applicant's arguments filed on April 7, 2009 have been fully considered but they are not persuasive.

8. The Declaration under 37 CFR 1.132 filed on April 7, 2009 is insufficient to overcome the rejection of claims 1-6, 11-13, 15, 16, and 18-24 based upon 35 U.S.C. §103(a) as being unpatentable over Irie et al. (U.S. Patent 5,959,028) in view of Straw (U. S. Patent Application Publication 2003/0165701), and the rejection of claim 21 based upon 35 U.S.C. §103(a) as being unpatentable over Irie et al. (U.S. Patent 5,959,028) in view of Straw (U. S. Patent Application Publication 2003/0165701) as

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applied to claims 1-6, 11-13, 15, 16, and 18-24 above and further in view of Leake (U. S. Patent 6,521,716) as set forth in the last Office action because of the following.

9. It appears that the focal arguments of Mr. M. Chen reside in the contention that Straw's paragraph #39 teaches removal of the volatile reaction medium from the specific Michael acceptor; Straw's paragraph #39 does not teach removal of volatiles from the curable composition (page 2, [0005]). Furthermore, Mr. M. Chen contends that Straw teaches that his compositions are "water borne", and in the examples the weight percent water in the curable composition is between 34% and 35% (page 2, [0006]).

10. It is noted that instant claim 1 recites the limitation "...wherein said curable mixture comprises 5% or less by weight non-reactive volatile compounds that have boiling points of 120°C or less". The specification discloses the following: "It is preferred that the curable mixture that contains multi-functional Michael donor, multi-functional Michael acceptor, and anion of a Michael donor is substantially free of volatile nonreactive compounds. In other embodiments, it is preferred that the reaction products of the reaction between the multi-functional Michael donor and the multi-functional Michael acceptor be substantially free of volatile nonreactive compounds. In some embodiments, both the mixture and the products are substantially free of volatile nonreactive compounds "(page 12, lines 1-7). It was also mentioned in the specification that remaining volatiles (ethanol, acetone, excess ethyl acetoacetate) were removed (examples 1, 3, 11, and 17) from specific Michael donors; the disclosure does not exemplifies the removal of volatiles from the curable composition. Therefore, Straw's paragraph #39 does not contradict the disclosure, but, to the contrary, fully matches it.

Mr. M. Chen confirms that Straw clearly discloses removal of the volatile reaction medium from the specific Michael ingredients, which fully corresponds to the above mentioned examples of the specification.

Furthermore, Irie discloses that when used as a coating composition, it may contain a variety of conventional additives such as extender pigments, coloring pigments, sag-preventing agents, UV absorbers and the like. After applying onto a substrate as a film, the composition may be cured, depending upon the type of catalyst, by leaving at ambient temperature or baking the film at a temperature between 100⁰C and 200⁰C, preferably between 120⁰C and 150⁰C (col. 6, lines 33-41). Straw discloses that all ingredients are added to the reactor and the mixture is heated to 120⁰C for 2 hours. The volatiles are then stripped under the reduced pressure at 120⁰C (page 6, [0065]). The coating was cured dry at 105⁰C for 20 minutes to give a hard dry film (page 6, [0073]).

Therefore, it is the examiner's position that under such high temperatures and long duration of time in both Irie and Straw' curable resin compositions the most (if not all) volatile solvent having boiling points of 120⁰C or less, as per newly amended claim 1, would be successfully removed from the curable mixture and also from the products.

As it was already mentioned in the previous Office action dated on January 9, 2009, in the absence of showing criticality in the specification of maintaining the amount of 2% or less by weight non-reactive volatile compounds, based on the total amount of curable mixture, it is the examiner position to believe that the combined Irie's and Straw's curable mixture characterized by exactly the same reactive equivalent ratio and

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the same compounds, such as multi-functional Michael donor, multi-functional Michael acceptor and an anion of a Michael donor, each of them has molecular weight within the claimed ranges, would be substantially identical to the instant claimed curable mixture; therefore we assume that these curable resin compositions (Irie, Straw, and the claimed invention) having substantially identical intended use (coating, etc.) would be substantially free of volatile non-reactive compounds.

It is worth to repeat again that Applicants can rebut a *prima facie* case of obviousness based on overlapping ranges by showing the criticality of the claimed range. "The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims. In such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range." *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP § 716.02 - § 716.02(g) for a discussion of criticality and unexpected results.

11. In response to the arguments against Irie's reference that it would not be obvious to a person of ordinary skill in the art to design a high-solids coating by simply removing the solvent from Irie's composition (page 4, [0015]), it is noted as it was mentioned in the current Declaration (pages 3-4, [0013], [0014]), Irie' curable resin composition is substantially identical to the claimed composition and it contains substantially identical ingredients. Therefore, it is the Examiner's position that one having ordinary skill in the art could successfully design a high-solids coating by simply removing the solvent from Irie's composition.

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12. It is noted that the applicants argue that, according the Declaration of Mr. M. Chen, Straw does not teach or suggest using compositions that are not water borne. That is, Straw teaches compositions that have more than 5% water by weight, and water is a non-reactive volatile compound (as defined in the present claims). Therefore Straw does not teach or suggest any composition with 5% or less of non-reactive volatile compounds; Irie, like Straw, fails to teach or suggest using compositions with 5% or less non- reactive volatile compounds (pages 8-9).

13. It is noted that the detailed response for this argument is made in paragraph 10 of current Office action.

14. In response to applicant's argument regarding the rejection of claim 21 under 35 U.S.C. §103(a) as being unpatentable as obvious over Irie in view of Straw and further in view of Leake (U. S. Patent 6,521,716) (pages 9-11), it is noted that as it was already mentioned in the previous Office action dated on April 7, 2009, the reference is analogous art because it is from the same field of endeavor concerning new coating resin composition curing by Michael addition reaction. It is further noted that "The motivation in the prior art to combine references does not have to be identical to that of the applicant to establish obviousness, i.e. it is not required for a finding of obviousness that motivation of the skilled artisan be the same as an applicant motivation", **In re Kemps**, 97 F.3d 1427, 1430, 40 USPQ2d 1309, 1312 (Fed. Cir. 1996) (holding there is sufficient motivation to combine teachings of prior art to achieve claimed invention where one reference specifically refers to the other).

Therefore, it is well settled that for a finding of obviousness under §103 the prior art need not disclose the same motivation as disclosed by an applicant.

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL M. BERNSHTEYN whose telephone number is (571)272-2411. The examiner can normally be reached on M-Th 8-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner, Art Unit 1796

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